CLAIMS

I claim:

1. An isolation platform for a structure to be supported comprising:

an upper plate upon which the structure to be supported is placed, said upper plate having a plurality of downward-facing, conical, rigid bearing surfaces;

a lower plate secured to a foundation, said foundation supporting the isolation platform and the structure to be supported, said lower plate having a plurality of upward-facing, conical, rigid bearing surfaces disposed opposite said downward-facing, conical, rigid bearing surfaces, said downward and upward bearing surfaces defining a plurality of bearing cavities between said upper and lower plates;

a plurality of rigid spherical balls interposed between said downward and upward bearing surfaces;

said downward and upward bearing surfaces comprising central apices having the same curvature as that of said spherical balls such that a restoring force is substantially constant, and having recess perimeters having the same curvature as that of said spherical balls, which connects said central apices and recess perimeters with continuous slope, wherein the curvature of said spherical balls and downward and upward bearing surfaces are further configured such that as said spherical balls and upper and lower plates displace laterally relative to one another, vertical displacement of said upper and lower plates is near zero; and

a retention mechanism for securing said lower plate and said upper plate together.

2. The isolation platform of claim 1, further comprising a resiliently deformable gasket interposed between said upper and lower plates.

3. The isolation platform of claim 1, wherein said upper plate comprises a plurality of upper plate segments attached to a plurality of corresponding upper connecting members which define said upper plate and further define a plurality of upper interstitial regions.

4. The isolation platform of claim 1, wherein said lower plate comprises a plurality of lower plate segments attached to a plurality of corresponding lower connecting members which define said lower plate and further define a plurality of lower interstitial regions.

5. The isolation platform of claim 3, wherein said upper interstitial regions are filled with a filler material.

6. The isolation platform of claim 4, wherein said lower interstitial regions are filled with a filler material.

7. An isolation platform for supporting a payload, comprising:

a first open pan structure having four plates having downward facing bearing surfaces, wherein said first open pan structure has a plurality of rigid members connected to said plates forming a quadrilateral, said first open pan structure having openings between each plate, each bearing surface comprising a recess with a central apex and a conical surface extending from said central apex continuously to a perimeter of said recess, wherein distances between said apices of said recesses are at least equal to distances antipodal points of a footprint of the payload;

a second open pan structure substantially identical to said first open pan structure and wherein said first and second open pan structures are positioned such that said bearing surfaces of said first and second open pan structures defining four cavities therebetween, each cavity containing at least one rigid ball each, and wherein said first and second open pan structures are movably fastened together with straps that simultaneously limit displacement of said first open pan structure relative to said second open pan structure in a vertical plane and reduce displacement in a horizontal plane of said first open pan structure relative to said second open pan structure.

8. The isolation platform of claim 7, wherein said first open pan structure further comprises a payload securing device on a top surface of said first open pan structure.

9. The isolation platform of claim 7, wherein said first and second open pan structures are open on one longitudinal end allowing access to cables.